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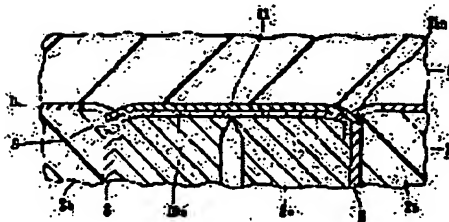
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URATSU MASAMI**(54) PRODUCTION OF SHEET LIKE RESIN MOLDED OBJECT PARTIALLY
DECORATED BY DECORATIVE SKIN MATERIAL****(57)Abstract:**

PURPOSE: To prevent the generation of burr at the boundary part of a decorative skin material forming a design surface by integrally molding the resin sheet main body part reaching the periphery of a backing layer around the decorative skin material so as to cover the peripheral edge part of the decorative skin material.



CONSTITUTION: The second molten resin B supplied to an unfilled cavity part flows toward the peripheral edge part 11b of a decorative skin material 11 having a backing layer 10a obtained in a primary molding process integrally molded thereon so as to border on the top part of the chevron-shaped frame like projection provided to the mold surface of a cavity mold 1 to cover the surface of the peripheral edge part 11b of the decorative skin material 11. A part of the second molten resin enters the gap S between a design

surface forming mold 2a and the cavity mold 1 and the resin sheet main body part

reaching the peripheral edge of the backing layer 10a is integrally molded on the peripheral surface of the decorative skin material 11 in the state connected to the short leg frame part 10b continued to the rear surface of the peripheral edge part 11b of the decorative skin material 11 and the peripheral edge of the backing layer 10a so as to cover the peripheral edge part 11b of the decorative skin material 11.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the manufacture approach of a sheet-like resin Plastic solid that there is no weld flash in the boundary section of the decoration skin material which forms a design side, and a quality sheet-like resin Plastic solid can be produced efficiently and that decoration skin material was prepared partially.

[0002]

[Description of the Prior Art] For example, after setting decoration skin material to the predetermined location of the cavity formed with the die of a vertical pair as the manufacture approach of a sheet-like resin Plastic solid used for the interior material sheet for automobiles etc. of having prepared decoration skin material partially, the approach of filling up with and mold clamp carrying out of the melting resin, and using as a sheet-like resin Plastic solid is learned (for example, refer to JP,63-11312,A and JP,1-291912,A).

[0003] However, since the periphery section of decoration skin material was not certainly being fixed when based on a conventional method, while there was a trouble that decoration skin material may shift from a desired location a little with the filling pressure of melting resin, there was also a trouble of the melting resin by the side of a rear face

having invaded into the periphery section of decoration skin material, and generating weld flash.

[0004]

[Problem(s) to be Solved by the Invention] This invention solves the above conventional troubles, the decoration skin material for forming the design side which consists of a dissimilar material partially is prepared in the predetermined part of a sheet-like resin Plastic solid without the location gap, and it is in offering the manufacture approach of the sheet-like resin Plastic solid in which decoration was partially carried out by the decoration skin material which can moreover produce efficiently the quality sheet-like resin Plastic solid which does not have weld flash etc. in the boundary section with decoration skin material.

[0005]

[Means for Solving the Problem] The manufacture approach of the sheet-like resin Plastic solid in which decoration was partially carried out by the decoration skin material of this invention made in order to solve the above-mentioned technical problem, The mold of the pair countered and arranged is made into a mold aperture condition. Decoration skin material in the predetermined location of the mold face of the mold of one of these by the guide frame which the periphery section can haunt freely It carries out [supply and / mold clamp] of the 1st melting resin to the inside cavity section divided with the guide frame among both molds after carrying out the pressure welding and setting, and the lining layer of sheet-like resin is fabricated at the rear face of said decoration skin material. Subsequently The 2nd melting resin is supplied to the non-filling cavity part around [where the shaping unification of the lining layer was carried out at said process after retreating said guide frame and solving the pressure welding to decoration skin material] decoration skin material. It is characterized by carrying out the shaping unification of the resin sheet subject section which covers the periphery section of this decoration skin material around said decoration skin material, and arrives at the periphery of said lining layer.

[0006]

[Example] This invention is explained to it at a detail, referring to a drawing to below. A drawing is what shows the forming cycle of the automobile interior material sheet with which the decoration skin material 11 which forms in the predetermined location of the front face of sheet-like resin Plastic solid 10 as shown in drawing 8 the design side which consists of a dissimilar material partially was formed without the location gap. The cavity mold which constitutes one side of the molds of the pair which one in drawing counters and is arranged, and in which a mold clamp and die opening are free, 2 is a core mold which constitutes another side, and the core mold 2 consists of design side formation mold 2a and resin sheet subject section formation mold 2b corresponding to the decoration skin material 11. Between this design side formation mold 2a and resin sheet subject section formation mold 2b, the core mold 2 can move vertically freely independently, and the guide frame 3 which made the tip the press section by which inner circumference was formed in the taper side is formed. As for the mold face of the cavity mold 1, decoration skin material maintenance side 1a and resin sheet subject section shaping side 1b are divided through frame-like upheaval 1c of Yamagata where a cross section is low, and when said guide frame 3 marches out, it is made to be turned by said press section at a tip on the other hand at outside **** of this frame-like upheaval 1c. In

addition, the supply gate of the melting resin with which 4 is prepared in design side formation mold 2a of the core mold 2, and 2c are concave steps prepared in the tip periphery of design side formation mold 2a.

[0007] In order to fabricate the sheet-like resin Plastic solid in which decoration was partially carried out by decoration skin material using such a mold First, as shown in drawing 1 After making decoration skin material maintenance side 1a of this cavity mold 1 carry out decoration temporary maintenance of the decoration skin material 11, such as a fabric base, with the means of suction and other arbitration by making the cavity mold 1 and the core mold 2 into a mold aperture condition, with a mold aperture condition A guide frame 3 is raised and pressure-welding immobilization of the periphery section of the decoration skin material 11 is carried out in the press section at the tip of a guide frame 3. In this case, instead of making decoration skin material maintenance side 1a carry out decoration temporary maintenance with the means of suction and other arbitration beforehand, as shown in drawing 2, it equips at the tip of a guide frame 3, and temporary immobilization of the decoration skin material 11 is carried out, and it can also carry out pressure-welding immobilization of the decoration skin material 11 by raising a guide frame 3 in the condition as it is at decoration skin material maintenance side 1a of the cavity mold 1. Subsequently, as shown in drawing 3, the 1st melting resin A is supplied to the inside cavity section divided with the guide frame 3 between decoration skin material maintenance side 1a of the cavity mold 1, and design side formation mold 2a of the core mold 2 from the supply gate 4. Lining layer 10a of sheet-like resin is fabricated into the part except periphery section 11b which carries out [mold clamp], pressurizes the 1st melting resin A, and touches the tip of a guide frame 3 among the rear faces of the decoration skin material 11 as shown in this and coincidence at drawing 4. The periphery of this lining layer 10a hangs from the rear face of the decoration skin material 11 as crus-breve-incudis frame part 10b fabricated by concave step 2c of the above mentioned tip periphery of design side formation mold 2a. In addition, in this invention, the above forming cycle is called the first forming cycle, and the forming cycle to the final product mentioned later is hereafter called the second forming cycle.

[0008] Next, as shown in drawing 5 The press side at the tip drops said guide frame 3 a little to a lower part location and the becoming location from both the mold faces of design side formation mold 2a and resin sheet subject section formation mold 2b. Between design side formation mold 2a and resin sheet subject section formation mold 2b It considers as the condition of having released periphery section 11b of the decoration skin material 11 while forming the clearance S for a resin break in. Lining layer 10a supplies the 2nd melting resin B through the supply gate which is not illustrated into the non-filling cavity part left behind to the perimeter of the decoration skin material 11 by which shaping unification was carried out by said first forming cycle in this condition. At this time, only design side formation mold 2a which moves vertically independently is raised slightly, may make it seal a non-filling cavity part more, and In order to prevent that the decoration skin material 11 is crushed by the clamping pressure of design side formation mold 2a and resin sheet subject section formation mold 2b, and aesthetic property is spoiled, you may make it raise the cavity mold 1 similarly a gone up part of design side formation mold 2a.

[0009] Thus, the 2nd melting resin B supplied to the non-filling cavity part Lining layer 10a obtained by the first forming cycle flows towards periphery section 11b of the

decoration skin material 11 by which shaping unification was carried out. It borders on the crowning of frame-like upheaval 1c of Yamagata in the mold face of the cavity mold 1. The front face of periphery section 11b of the decoration skin material 11 with a wrap A part of 2nd melting resin B between design side formation mold 2a and the cavity mold 1 in the clearance S for a resin break in the shaping unification of the resin sheet subject section 10 which covers periphery section 11b of this decoration skin material 11 around the decoration skin material 11 after having been formed successively by crus-breve-incudis frame part 10b which enters and follows the rear face of periphery section 11b of the decoration skin material 11 and the periphery of said lining layer 10a, and arrives at the periphery of said lining layer 10a is carried out. If vacuum free passage way 2c which passes to a non-filling cavity part is prepared in the side-face upper part of design side formation mold 2a and vacuum processing of the non-filling cavity part is carried out at this time as shown in drawing 6 Since periphery section 11b of the decoration skin material 11 is easy to be bent in said clearance S between the core molds 2, when the 2nd melting resin B is supplied, that with which periphery section 11b of the decoration skin material 11 was certainly covered by the 2nd melting resin B will be obtained, and it is more desirable. Thus, what is necessary is to carry out the mold aperture of the cavity mold 1 after fixed time amount cooling, and the core mold 2, to take out a product, to end a one cycle, and just to repeat the same forming cycle as the following, as shown in drawing 7 after the sheet-like resin Plastic solid decoration was partially carried out [the Plastic solid] by the decoration skin material 11 is fabricated.

[0010] Thus, the acquired sheet-like resin Plastic solid After the shaping unification of the lining layer 10a was carried out the decoration skin material 11 which forms a design side having the condition of having been fixed to the predetermined location by the first forming cycle held, Since the resin sheet subject section 10 which covers periphery section 11b of this decoration skin material 11 around the decoration skin material 11 by the second forming cycle, and arrives at the periphery of said lining layer 10a serves as a shaping unification **** product The decoration skin material 11 will be formed in a predetermined location without a location gap, and there will be no weld flash in the boundary section of the decoration skin material 11 and the resin sheet subject section 10, and a quality thing will be obtained. Moreover, different resin can also be used although the 1st melting resin A and the 2nd melting resin B use the thing same as a principle.

[0011]

[Effect of the Invention] According to this invention, there is no weld flash in the boundary section of the decoration skin material which forms a design side, a quality sheet-like resin Plastic solid can be produced within one die, and there is an advantage that very efficient production can be performed so that clearly also from the above explanation. Therefore, as the manufacture approach of a sheet-like resin Plastic solid that the decoration of this invention was partially carried out by the decoration skin material which swept away the conventional trouble, the place which contributes to development of industry is size very much.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. **** shows the word which can not be translated.

3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The mold of the pair countered and arranged is made into a mold aperture condition. Decoration skin material in the predetermined location of the mold face of the mold of one of these by the guide frame which the periphery section can haunt freely It carries out [supply and / mold clamp] of the 1st melting resin to the inside cavity section divided with the guide frame among both molds after carrying out the pressure welding and setting, and the lining layer of sheet-like resin is fabricated at the rear face of said decoration skin material. Subsequently The 2nd melting resin is supplied to the non-filling cavity part around [where the shaping unification of the lining layer was carried out at said process after retreating said guide frame and solving the pressure welding to decoration skin material] decoration skin material. The manufacture approach of the sheet-like resin Plastic solid in which decoration was partially carried out by the decoration skin material characterized by carrying out the shaping unification of the resin sheet subject section which covers the periphery section of this decoration skin material around said decoration skin material, and arrives at the periphery of said lining layer

[claim 2] The manufacture approach of the sheet-like resin Plastic solid in which carried out vacuum processing of the non-filling cavity part without the decoration skin material by which the shaping unification of the lining layer was carried out among cavities, and decoration was partially carried out by the decoration skin material according to claim 1 which supplies the 2nd melting resin and fabricates the resin sheet subject section after bending the periphery of decoration skin material to a core mold side.

[Translation done.]

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Patent Abstracts of Japan

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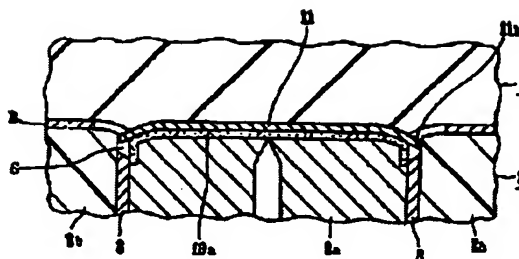
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TITLE : PRODUCTION OF SHEET LIKE RESIN
MOLDED OBJECT PARTIALLY
DECORATED BY DECORATIVE SKIN
MATERIAL



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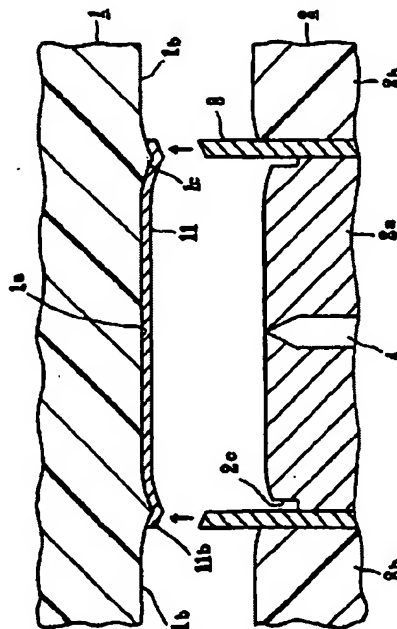
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(54) 【発明の名称】 加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法

(57) 【要約】

【目的】 意匠面を形成する加飾表皮材の境界部にバリがなく高品質なシート状樹脂成形体を効率よく生産することができる加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法を提供すること。

【構成】 対向して配置した一対の型を型開き状態としてその一方の型の型面の所定位置に加飾表皮材をその周縁部が出役自在なガイド枠により圧接してセットしたうえ同型間においてガイド枠で仕切られた内側キャビティ部に第1の熔融樹脂を供給・型締めして前記加飾表皮材の裏面にシート状樹脂の裏打層を成形し、次いで、前記ガイド枠を後退させて加飾表皮材への圧接を解いたうえ前記工程で裏打層が成形一体化された加飾表皮材の周囲の未充填キャビティ部分に第2の熔融樹脂を供給して前記加飾表皮材の周囲にこの加飾表皮材の周縁部を覆い且つ前記裏打層の周縁に連する樹脂シート主体部を成形一体化する。



【特許請求の範囲】

【請求項1】 対向して配置した一対の型を型開き状態としてその一方の型の型面の所定位置に加飾表皮材をその周縁部が出没自在なガイド枠により圧接してセットしたうえ両型間においてガイド枠で仕切られた内側キャビティ部に第1の溶融樹脂を供給・型締めして前記加飾表皮材の裏面にシート状樹脂の裏打層を成形し、次いで、前記ガイド枠を後退させて加飾表皮材への圧接を解いたうえ前記工程で裏打層が成形一体化された加飾表皮材の周囲の未充填キャビティ部分に第2の溶融樹脂を供給して前記加飾表皮材の周囲にこの加飾表皮材の周縁部を覆い且つ前記裏打層の周縁に達する樹脂シート主体部を成形一体化することを特徴とする加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法

【請求項2】 キャビティのうち裏打層が成形一体化された加飾表皮材のない未充填キャビティ部分をバキューム処理して加飾表皮材の周縁をコア型側へ折り曲げてから第2の溶融樹脂を供給して樹脂シート主体部を成形する請求項1に記載の加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、意匠面を形成する加飾表皮材の境界部にバリがなく高品質なシート状樹脂成形体を効率よく生産することができる部分的に加飾表皮材を設けたシート状樹脂成形体の製造方法に関するものである。

【0002】

【従来の技術】 例えば、自動車用内装材シート等に用いられる部分的に加飾表皮材を設けたシート状樹脂成形体の製造方法として、上下一対の成型形で形成したキャビティの所定位置に加飾表皮材をセットした後、溶融樹脂を充填し型締めしてシート状樹脂成形体とする方法が知られている（例えば、特開昭63-11312号公報や特開平1-291912号公報参照）。

【0003】 ところが、従来法によるときは加飾表皮材の周縁部が確実に固定されていないために溶融樹脂の充填圧力により加飾表皮材が所望の位置から若干ずれる場合があるという問題点があるとともに、加飾表皮材の周縁部に裏面側の溶融樹脂が侵入してバリを発生させるという問題点もあった。

【0004】

【発明が解決しようとする課題】 本発明は上記のような従来の問題点を解決して、部分的に異種材料よりなる意匠面を形成するための加飾表皮材がシート状樹脂成形体の所定箇所に位置ずれなく設けられており、しかも、加飾表皮材との境界部にバリなどのない高品質なシート状樹脂成形体を効率よく生産することができる加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法を提供することにある。

【0005】

【課題を解決するための手段】 上記の課題を解決するためになされた本発明の加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法、対向して配置した一対の型を型開き状態としてその一方の型の型面の所定位置に加飾表皮材をその周縁部が出没自在なガイド枠により圧接してセットしたうえ両型間においてガイド枠で仕切られた内側キャビティ部に第1の溶融樹脂を供給・型締めして前記加飾表皮材の裏面にシート状樹脂の裏打層を成形し、次いで、前記ガイド枠を後退させて加飾表皮材への圧接を解いたうえ前記工程で裏打層が成形一体化された加飾表皮材の周囲の未充填キャビティ部分に第2の溶融樹脂を供給して前記加飾表皮材の周囲にこの加飾表皮材の周縁部を覆い且つ前記裏打層の周縁に達する樹脂シート主体部を成形一体化することを特徴とするものである。

【0006】

【実施例】 以下に、本発明を図面を参照しつつ詳細に説明する。図面は、図8に示されるような、シート状樹脂成形体10の表面の所定位置に部分的に異種材料よりなる意匠面を形成する加飾表皮材11が位置ずれなく設けられた自動車内装材シートの成形工程を示すものであって、図中1は対向して配置される型締・型開自在な一対の型のうちの一方を構成するキャビティ型、2は他方を構成するコア型であり、コア型2は加飾表皮材11に対応した意匠面形成型2aと樹脂シート主体部形成型2bとからなり、この意匠面形成型2aと樹脂シート主体部形成型2bとの間にはコア型2とは独立に昇降自在で先端を内周がテーパ面に形成された押圧部としたガイド枠3が設けられ、一方、キャビティ型1の型面は加飾表皮材保持面1aと樹脂シート主体部形成面1bとが断面が低い山形の枠状隆起1cを介して区画されていて、前記ガイド枠3が進出したとき先端の前記押圧部はこの枠状隆起1cの外側面に向けられるようにしてある。なお、4はコア型2の意匠面形成型2aに設けられている溶融樹脂の供給ゲート、2cは意匠面形成型2aの先端周縁に設けられている凹段部である。

【0007】 このような型を用いて加飾表皮材により部分的に加飾されたシート状樹脂成形体を成形するには、まず、図1に示されるように、キャビティ型1とコア型2を型開き状態として該キャビティ型1の加飾表皮材保持面1aにファブリック等地の加飾表皮材11を吸引その他任意の手段で仮保持させたうえ型開き状態のままガイド枠3を上昇させて加飾表皮材11の周縁部をガイド枠3の先端の押圧部で圧接固定する。この場合、加飾表皮材11は予め加飾表皮材保持面1aに吸引その他任意の手段で仮保持させる代わりに、図2に示すようにガイド枠3の先端に載装し仮固定しておき、そのままの状態でガイド枠3を上昇させることによりキャビティ型1の加飾表皮材保持面1aに加飾表皮材11を圧

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接固定することもできる。次いで、図3に示されるように、キャビティ型1の加飾表皮材保持面1aとコア型2の意匠面形成型2a間においてガイド枠3で仕切られた内側キャビティ部に供給ゲート4より第1の溶融樹脂Aを供給し、これと同時に図4に示すように型締めして第1の溶融樹脂Aを加圧し加飾表皮材11の裏面のうちガイド枠3の先端と接触している周縁部11bを除く部分にシート状樹脂の裏打層10aを成形し、この裏打層10aの周縁は前記した意匠面形成型2aの先端周縁の凹

10 段部2cにより成形された短脚枠部10bとして加飾表皮材11の裏面より垂下される。なお、本発明においては以上の成形工程を第1次成形工程と称し、以下、後述する最終製品までの成形工程を第2次成形工程と称する。

【0008】次に、図5に示されるように、前記ガイド枠3をその先端の押圧面が意匠面形成型2aと樹脂シート主体部形成型2bの凹型面より若干下方位置となる位置まで下降させて意匠面形成型2aと樹脂シート主体部形成型2bの間に樹脂介入用の隙間Sを形成するとともに加飾表皮材11の周縁部11bを解放した状態とし、この状態で前記第1次成形工程で裏打層10aが成形一体化された加飾表皮材11の周囲に残された未充填キャビティ部分に図示しない供給ゲートを通じて第2の溶融樹脂Bを供給する。この時、独立して昇降する意匠面形成型2aのみを僅かに上昇させて未充填キャビティ部分をより密閉するようにしてもよいし、意匠面形成型2aと樹脂シート主体部形成型2bの型締圧により加飾表皮材11がつぶれて風合いが損なわれるのを防止するため、意匠面形成型2aの上昇分だけ同様にキャビティ型1を上昇させるようにしてもよい。

【0009】このように未充填キャビティ部分に供給された第2の溶融樹脂Bは、第1次成形工程で得られた裏打層10aが成形一体化された加飾表皮材11の周縁部11bに向けて流動し、キャビティ型1の型面にある山形の枠状隆起1cの頂部を境界として加飾表皮材11の周縁部11bの表面を覆うとともに、第2の溶融樹脂Bの一部は意匠面形成型2aとキャビティ型1の間に樹脂介入用の隙間Sに入り込んで加飾表皮材11の周縁部11bの裏面と前記裏打層10aの周縁に続く短脚枠部10bに連絡された状態で加飾表皮材11の周囲にこの加飾表皮材11の周縁部11bを覆い且つ前記裏打層10aの周縁に達する樹脂シート主体部10が成形一体化される。この時、図6に示されるように、意匠面形成型2aの側面上部に未充填キャビティ部分に通ずるバキューム連通路2cを設けておき、未充填キャビティ部分をバキューム処理してやれば、加飾表皮材11の周縁部11bがコア型2の前記隙間Sへ折り曲げられ易いので、第2の溶融樹脂Bを供給した場合に加飾表皮材11の周縁部11bが第2の溶融樹脂Bで確実に覆われたものが得られることとなってより好ましい。このようにして加飾

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表皮材11により部分的に加飾されたシート状樹脂成形体が成形された後は、図7に示されるように、一定時間冷却後キャビティ型1とコア型2を型開きして製品を取り出しワンサイクルを終了し、以下同様の成形工程を繰り返せばよい。

【0010】このようにして得られたシート状樹脂成形体は、意匠面を形成する加飾表皮材11が第1次成形工程によって所定位置に固定された状態を保持されつつ裏打層10aが成形一体化された後、第2次成形工程によって加飾表皮材11の周囲にこの加飾表皮材11の周縁部11bを覆い且つ前記裏打層10aの周縁に達する樹脂シート主体部10が成形一体化された製品となるので、加飾表皮材11は位置ずれなく所定位置に形成され、また、加飾表皮材11と樹脂シート主体部10の境界部にバリがなく高品質なものが得られることとなる。また、第1の溶融樹脂Aと第2の溶融樹脂Bは原則としては同じものを用いるが、異なった樹脂を用いることもできる。

【0011】

20 【発明の効果】以上の説明からも明らかなように、本発明によれば、意匠面を形成する加飾表皮材の境界部にバリがなく高品質なシート状樹脂成形体を一つの成型型内で生産することができ、極めて効率的な生産を行なえるという利点がある。よって本発明は従来の問題点を一掃した加飾表皮材により部分的に加飾されたシート状樹脂成形体の製造方法として、産業の発展に寄与するところは極めて大である。

【図面の簡単な説明】

30 【図1】本発明の実施例における第1次成形工程の第1段階を説明する断面図である。

【図2】本発明のその他の実施例における第1次成形工程の第1段階を説明する断面図である。

【図3】本発明の実施例における第1次成形工程の第2段階を説明する断面図である。

【図4】本発明の実施例における第1次成形工程の第3段階を説明する断面図である。

【図5】本発明の実施例における第2次成形工程を説明する断面図である。

40 【図6】本発明のその他の実施例における第2次成形工程を説明する断面図である。

【図7】本発明の実施例における離型工程の断面図である。

【図8】本発明により得られる製品の一部分切欠斜視図である。

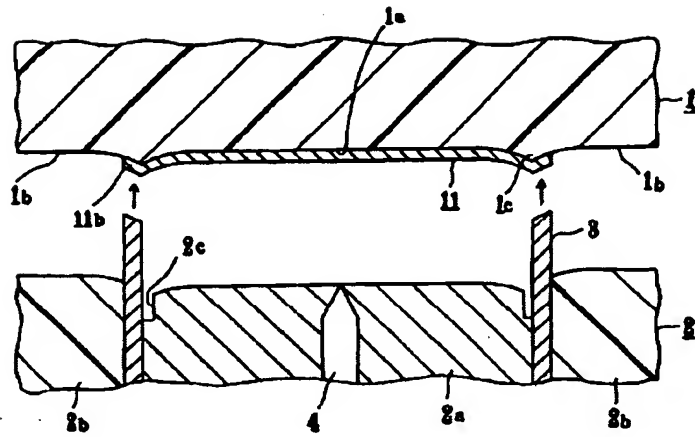
【符号の説明】

- 1 キャビティ型
- 2 コア型
- 3 ガイド枠
- 10 樹脂シート主体部
- 11 加飾表皮材

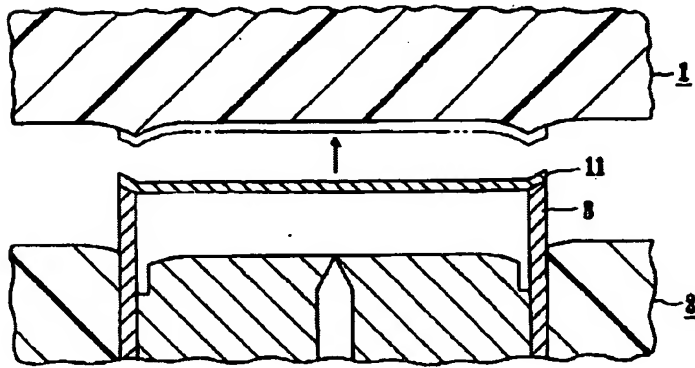
10a 磨打層

11b 周縁部

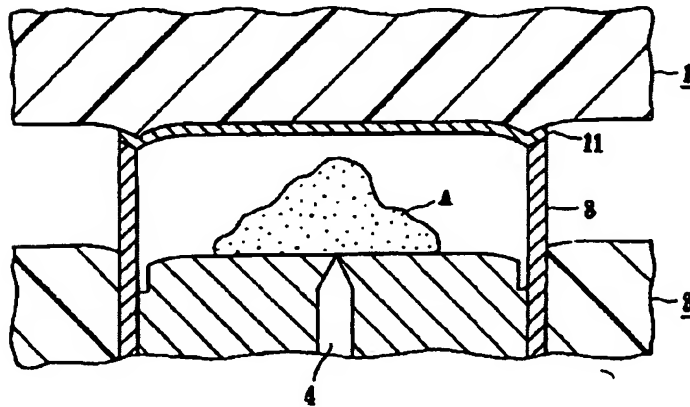
【図1】



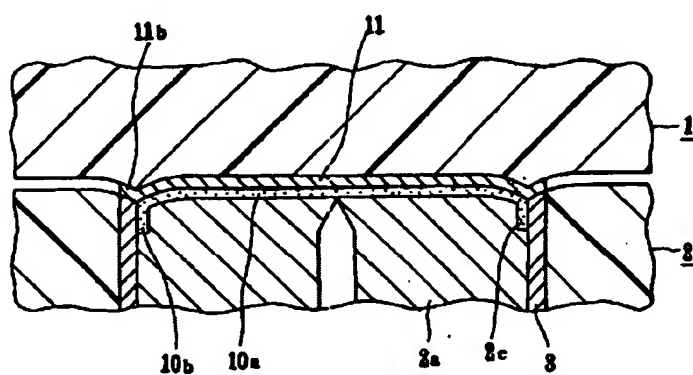
【図2】



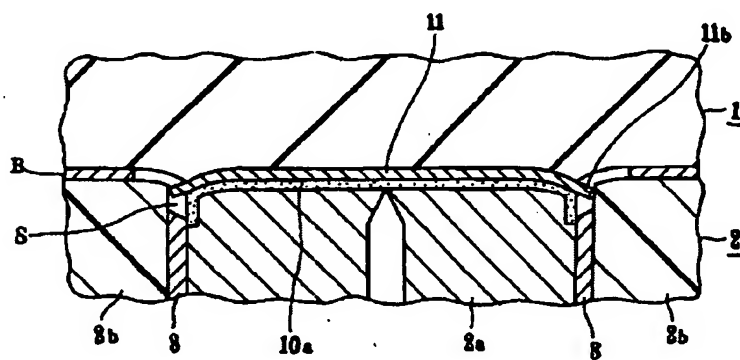
【図3】



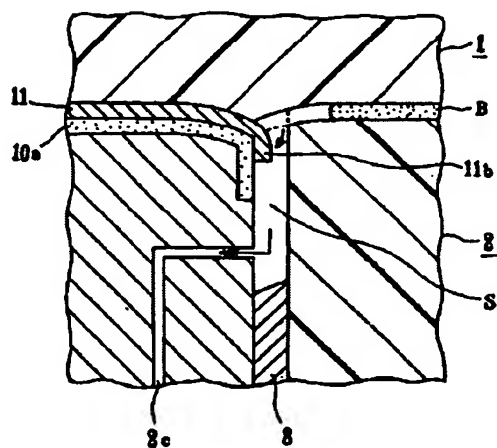
【図4】



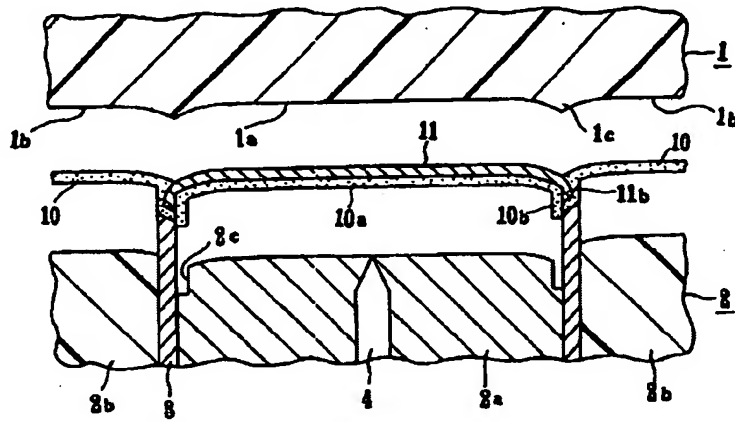
【図5】



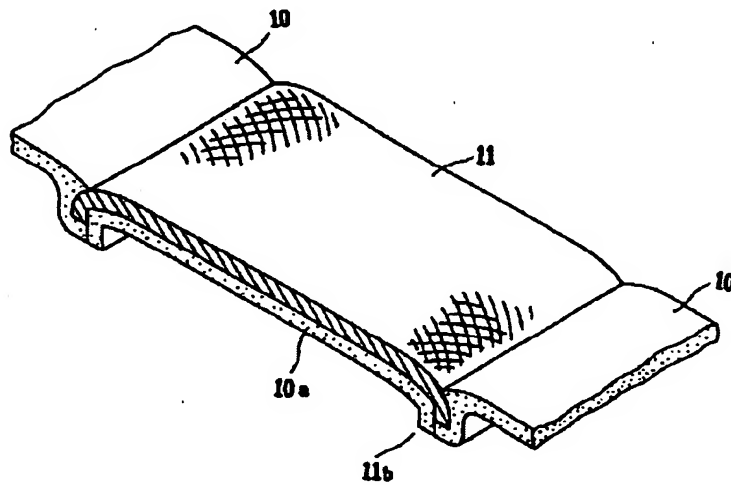
【図6】



【図7】



【図8】



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